

**ILLINOIS OCCUPATIONAL AND ENVIRONMENTAL HEALTH AND SAFETY EDUCATION AND RESEARCH CENTER**

**SUMMARY ANNUAL REPORT  
July 1, 2011 – June 30, 2012  
NIOSH Training Grant  
No. T42 OH 008672**

**SUBMITTED BY:  
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CENTER DIRECTOR  
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2121 W. Taylor Street  
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**(October 2012)**

## PROJECT SUMMARY (See instructions):

The Occupational and Environmental Health and Safety Education and Research Center at the University of Illinois at Chicago exists to improve, promote, and maintain the health of workers and communities by applying innovative and interdisciplinary approaches to: 1) prepare professionals to be leaders in occupational and environmental safety and health who will direct and manage occupational and environmental safety and health programs, teach other occupational and environmental health professionals, and research issues pertinent to occupational and environmental safety and health; 2) provide continuing education to occupational and environmental health and safety professionals and outreach to workers and communities to improve their knowledge, skills, and awareness of key issues in occupational and environmental safety and health, devoting special attention to the problems and needs of at risk and underserved workers and communities; 3) contribute to the knowledge base in occupational and environmental safety and health by preparing doctoral students, performing faculty and student research on problems of regional, national, and global significance, and disseminating the results of their research; and 4) serve as a regional information resource. The ERC has 7 academic training programs (6 funded by NIOSH), 2 continuing education programs, a pilot project research training program (PPRT), a targeted research training program (TRT), and center wide activities including the administrative core, and outreach, diversity recruitment, and interdisciplinary programs. The 7 academic programs include 4 core disciplines, industrial hygiene (IH), occupational medicine (OM), occupational health nursing (OHN)- this program is not funded by NIOSH, and occupational safety (OS), and programs in hazardous substances training (HSAT), agricultural safety and health (ASH-A) and occupational and environmental epidemiology (OEE). Doctoral- level research training (PhD) is provided in 4 disciplines (IH, OHN, OS, OEE). The continuing education and outreach (CEO) program provides continuing education for health professionals in the core disciplines (IH, OHN, OM, OS) and in hazardous substances (HST) and agricultural safety and health (ASH-CE). Training in the ERC is both multidisciplinary and interdisciplinary. The ERC is administratively part of the Environmental and Occupational Health Sciences (EOHS) division at the SPH. The OM program is a two-year occupational medicine residency program in EOHS with support from the Graduate Medical Education program. The OEE program is administered in the Epidemiology and Biostatistics division in SPH. The OHN program is in the UIC College of Nursing, Department of Health Systems Science. The ASH-A program is in the College of Agricultural, Consumer, and Environmental Sciences, University of Illinois at Urbana-Champaign (UIUC). The CWA provides support for each of the component programs and manages interdisciplinary activities. The ERC has an Executive Committee composed of the ERC Director and Deputy Director as well as each program director. The ERC has an external advisory committee that meets 1-2 times per year.

## RELEVANCE (See instructions):

Occupational injuries and illnesses continue to be a significant public health problem. There is a significant need for occupational safety and health professionals and researchers to address these injuries and illnesses. The Illinois ERC continues to address these needs in a highly interdisciplinary and cohesive manner that allows us to accomplish far more than would be possible by a collection of individual programs. The ERC programs are well-integrated with each other and are designed to foster interdisciplinary interaction in the teaching, research, and service components of our mission.

PROJECT/PERFORMANCE SITE(S) (if additional space is needed, use Project/Performance Site Format Page)

**Project/Performance Site Primary Location**

Organizational Name: University of Illinois at Chicago

DUNS: 098987217

Street 1: 2121 W. Taylor St.

Street 2: MC 922

City: Chicago

County: Cook

State: IL

Province:

Country: USA

Zip/Postal Code: 60612

Project/Performance Site Congressional Districts: IL-07

**Additional Project/Performance Site Location**

Organizational Name:

DUNS:

Street 1:

Street 2:

City:

County:

State:

Province:

Country:

Zip/Postal Code:

Project/Performance Site Congressional Districts:

SENIOR/KEY PERSONNEL. See instructions. *Use continuation pages as needed* to provide the required information in the format shown below. Start with Program Director(s)/Principal Investigator(s). List all other senior/key personnel in alphabetical order, last name first.

Name	eRA Commons User Name	Organization	Role on Project
Conroy, Lorraine M.	LCONROY	UIC SPH EOHS	Center Director, TRT Director, PPRT Director, OS Interim Co-director
Stayner, Leslie		UIC SPH EB	ERC Deputy Director, Occ/Env Epidemiology Director
Buchanan, Susan		UIC SPH EOHS	OM Director
Scheff, Peter		UIC SPH EOHS	IH Interim Director
Darabi, Houshang		UIC COE MIE	OS Interim Co-director
Aherin, Robert		UIUC ACES	ASH Director
Zanoni, Joseph		UIC EOHS	CE and Outreach Director

OTHER SIGNIFICANT CONTRIBUTORS

Name	Organization	Role on Project
Cali, Salvatore	UIC SPH EOHS	OS, IH Assoc. Director; TRT Team Leader
Forst, Linda	UIC SPH EOHS	EOHS Division Director; TRT Team Leader
Hopcia, Karen	UIC CON HHS	OHN Director (OHN program is not NIOSH funded)
Petrea, Robert	UIUC ACES	ASH Assoc. Director
Hepler, Jordan	UIC SPH EOHS	ERC Project Coordinator

**Human Embryonic Stem Cells** ☒ No ☐ Yes

If the proposed project involves human embryonic stem cells, list below the registration number of the specific cell line(s) from the following list: <http://stemcells.nih.gov/research/registry/eligibilityCriteria.asp>. *Use continuation pages as needed.*

If a specific line cannot be referenced at this time, include a statement that one from the Registry will be used.

**Cell Line**

The University of Illinois at Chicago Occupational and Environmental Health and Safety Education and Research Center (Illinois ERC), a National Institute for Occupational Safety and Health (NIOSH)-funded training grant since 1977, completed year four of a six year project period (2008-2014). The ERC provides MS and PhD training in industrial hygiene (IH), occupational health nursing (OHN) {the OHN program is not NIOSH funded}, occupational safety (OS), and occupational and environmental epidemiology (OEE) as well as occupational medicine residency training (OM), including a MPH graduate degree, and specialized training in hazardous substances (HSAT) and agricultural safety and health to students in a variety of degree programs (ASH-A). Continuing Education components include occupational medicine, occupational health nursing, industrial hygiene, occupational safety, and occupational epidemiology, as well as targeted programs in hazardous substances (HST) and agricultural safety and health (ASH-CE). The Illinois ERC supports two research training programs, a pilot project research training program (PPRT) which provides small grants to new occupational safety and health investigators and a targeted research training program (TRT) that provides support to interdisciplinary research training teams.

### 2011-2012 Highlights

- During the 2011-2012 reporting year there were 26 masters level trainees (21 with NIOSH support), 23 doctoral level trainees (20 with NIOSH support), 7 undergraduate trainees (all with partial NIOSH support), and 6 OM residents (all with NIOSH support). Trainees included 17 in IH, 2 in OHN, 6 in OM, 9 in OS, 7 in OEE, 3 in HSAT and 13 in ASH.
- Five new students declared the minor in agricultural safety and Health. Four students completed the requirements for the minor. Seventy-five students completed our three core agricultural safety and health 400 level courses. Additionally, 5 students completed 400 level independent study courses, 3 completed internships and one completed an undergraduate thesis in agricultural safety and health.
- The CEO Program reached 4434 participants in 126 courses and conferences for 45,602 person hours of occupational and environmental health education. Continuing Education events included:
  - Alice Hamilton Centennial Celebration and Governor Quinn Proclamation with Lorraine Conroy, Christopher Sellers and Leslie Nickels in Chicago, IL for 31 participants on 9/13/2011.
  - NIOSH Occupational Health Disparities National Conference, with Linda Rae Murray in Chicago, IL for 242 participants on 9/14-15/2011, co-sponsored by NIOSH, Department of Labor, and NIEHS.
  - National Black Lung Conference, with Robert Cohen in Bloomington, IL for 120 participants on 10-4-2011, co-sponsored by John H. Stroger Hospital.
  - University of Illinois at Chicago Immigrant Health Research Conference in Chicago, IL for 105 participants on 12/8/2011, co-sponsored by the UIC School of Public Health.
  - Minority Health in Midwest Conference /Minority Public Health Student Association in Chicago, IL with Linda Rae Murray for 323 participants, 2/24/2012, co-sponsored by the UIC School of Public Health.
  - Quality Work, Quality Care National Home Care Conference/FHI 360 in Washington, DC for 85 participants on 4/2/2012, co-sponsored by Johns Hopkins Education and Research Center for Occupational Health and Safety.
- The Occupational Medicine program added a new session to our Wednesday morning conferences: a monthly Core Content session. A knowledge topic is chosen, Dr. Buchanan submits sub-categories or specific questions on the topic, each resident volunteers for one section, and presents it at the session, facilitated by Dr. Buchanan.
- The Occupational Medicine program also added two new rotations during the last year: Rush Employee Health with Dr. Duvall, and UHS Administrative month during which senior residents spend one month as the "assistant medical director" under Dr. Marder.
- Overall this has been a highly successful year for the Occupational and Environmental Epidemiology program. One trainee finished our doctoral program and one trainee completed our MS program. We have accepted five new doctoral students into the program. Our targeted research training group in Occupational and Environmental Epidemiology has developed a protocol for a study on biking and air pollution. They are going into the field with the study in October.
- The Outreach program had a very productive year with activities in the following areas:
  - *Total Worker Health*: The Illinois ERC has broadened its mission to integrate health promotion with worker protection programs in our outreach efforts. In September, 2010 we began collaborating with UIC's Midwest Latino Research Health Institute of the UIC School of Social Work. With funding from a CDC REACH grant for the creation of a Center to Elimination of Health Disparities, CEED aims to improve health outcomes in Latino and

African American communities. ERC staff (Love) is closely collaborating on one of CEED's projects, to conceptualize and write a train-the-trainer curriculum for Community Health Workers/Promotores de Salud (community based lay health workers) on diabetes and cardiovascular disease prevention in low income Latino and African American communities. This curriculum uses a popular education approach and incorporates interactive learning activities. The curriculum will undergo pilot testing beginning February, 2012 (10 sessions, 3 hours per session), including a unit on stress which incorporates both work stress issues for CHWs as well as personal, family, and neighborhood stressors. The ERC (Love) will co-teach the pilot phase of the curriculum and assist CEED staff in revisions. In addition to the nutrition and healthy eating curriculum, the Illinois ERC (Zanoni) is working on another CEED project: the creation of an alliance of health care institutions (hospitals and clinics), community organizations, academic institutions, and government agencies to advocate for the recognition of CHWs as valued team members in the provision of health care services.

- *Worker Centers:* A major focus of the Illinois ERC outreach activities in recent years has been providing education and technical assistance to Worker Centers. We are currently working the Chicago Workers Collaborative (CWC) and Warehouse Workers for Justice (WWJ). CWC is representing Latino temporary workers at a metal furniture manufacturing facility located near our office. The workers have been concerned about persistent ventilation problems at the plant related to suspected carbon monoxide and other chemical exposures. We (Zanoni & Love) began collaborating with the Chicago Area Committee on Occupational Safety and Health (CACOSH) to advise CWC staff on worker rights following an OSHA inspection and to help them become more knowledgeable about the inspection process. In response to a request from the workers, we also conducted a meeting for shop stewards and CWC staff with Drs. Buchanan and Orris at the UIC Occupational Medicine Clinic to discuss the possibility of medical evaluations in this workforce and wrote a report summarizing the various options available to them. WWJ asked us to assist them in researching OSHA citations in the warehouse industry for a sample of large companies with warehouses located in Will County, IL, a major hub in the goods distribution industry. The goods distribution/logistics industry has been identified by OSHA as a high hazard industry, and the OSHA regional office created a local emphasis program targeting warehouse employers in Illinois in 2006. Ms. Love helped WWJ analyze data for OSHA inspections in the five years since the local emphasis program began and assisted them in writing a report of the findings.
- *Home Care/Personal Care:* ERC staff (Zanoni & Love) have a longstanding relationship with the Service Employees International Union (SEIU), doing peer education and training projects on home health care hazards (bloodborne pathogens, pandemic flu, and workplace violence). Under a NIOSH funded pilot project targeted research project, we are currently developing an ergonomics self-assessment tool with focus groups of home care workers represented by SEIU. We are currently observing training sessions that are now being conducted with thousands of PAs in Illinois for the first time beginning December, 2011.
- *Youth Work:* Instituto del Progreso Latino is a large workforce development center for Latino workers in Chicago. Recently funded by an OSHA Susan Harwood grant, IDPL has asked ERC staff to develop a curriculum on OSHA rights and hazard recognition for IDPL teachers at a health careers charter high school and at an alternative high school which focuses on environmental issues. We will work with students to shape the curriculum. We are also creating a health and safety reference library for IDPL as a follow up to a three-day training program on OSHA and hazard recognition for their ESL, job readiness, and manufacturing teachers, which we conducted in January, 2012.
- *Primary Metals Manufacturing:* ERC staff are advising the Calumet Area Industrial Commission on recruiting small and mid sized employers in primary metals manufacturing in south Chicago and northwestern Indiana to train their workforce on a range of hazards affecting this industry, e.g., lead, silica, confined space work, slips/trips/falls. We are also advising them on effective approaches to delivering the content (i.e., learner centered, interactive teaching methods rather than lecture).

### **Awards and Scholarships**

- Andrew Hennenfent (ASH-A) who graduated of veterinary medicine program and is now completing his masters of public health was selected by the Centers for Disease Control to be in their Epidemiology Elective Program.
- Stephanie DeFlorio (OEE) won the Edith Heide Memorial Scholarship from IDPH for \$2,000 in April of 2012, and APHA-Student Assembly's Chair Citation Award for Public Health Leadership (award total ~\$600) in May 2012.

- Eseosa Orumwense (OS) received the James P. Keogh Scholarship from the Occupational Health Section of APHA and the Scholarship for Disadvantaged Students from the Urban Health and Diversity Program at UIC.
- Jordan Hepler received the Best Student Poster Award from the Social Concerns Committee of the AIHA for his poster *Rainfall Effects on E. coli Concentrations at Chicago Beaches*.
- Jordan Hepler received the Erma Byrd Scholarship from the Department of Education.
- Lasbat Erogbogbo also received the Erma Byrd Scholarship from the Department of Education and the Scholarship for Disadvantaged Students from the Urban Health and Diversity Program at UIC.
- Ramon Lopez received the Kyle B. Dotson Scholarship, the Chicago AIHA Local Section Scholarship, and the Michael Bruton Workplace Safety Foundation Scholarship.
- Olanokunmi Alabi received the Erma Byrd Scholarship from the Department of Education and the Scholarship for Disadvantaged Students from the Urban Health and Diversity Program at UIC.
- Frank Pagone was recognized by the AIHA Social Concerns Committee for significant contribution to the advancement of knowledge in areas of Social Concern in the field of Occupational and Community Health and Safety.

### **Graduate Employment**

- Two Doctors of Veterinary Medicine students graduated. One is employed by a private practice in Wisconsin and will be providing services to dairy farmers. The other graduate is completing his master's degree in public Health.
- Five undergraduate trainees graduated. One student entered the new Technical Systems Management MS program and will continue as a graduate student trainee and one student will be helping manage their large family farm that has several employees. The other three students accepted management trainee positions with large grain companies. The grain industry is seeking individuals with agricultural backgrounds with academic training in occupational safety and health.
- IH graduates are employed as Health and Safety Analyst, Rexam Beverage Can of North America; Management Associate of Safety and IH, Unites States Steel; Industrial Hygienist, Liberty Mutual Group.
- OS graduates are employed as Safety Management Associate, Gerdau; Safety Engineer, Ascend Performance Materials; Compliance Consultant, Environmental Resources Management.
- OM graduates are employed as Medical Director, St. Anthony Hospital Employee Health; OM Staff Physician, Carle Clinic.
- Occupational and Environmental Epidemiology graduate is employed as a consultant.

### **Leadership**

- Dr. Stayner received the 2012 NIOSH Alice Hamilton Science Award Winner as coauthor on the NIOSH "Current Intelligence Bulletin: Asbestos Fibers and Other Elongate Mineral Particles: State of the Science and Roadmap for Research."
- Dr. Stayner was elected Fellow of the Collegium Ramazzini in August 2011
- Dr. Aherin helped lead the development of the Grain Handling Safety Coalition to address issues associated with the injury and health risk associated with handling and storage of grain on farms and elevators. He is the program director for a project funded by OSHA to develop a community based grain safety education program.
- Dr. Aherin serves on the advisory committee for the Great Plains NIOSH funded Agricultural Health Center at the University of Iowa.
- Dr. Buchanan became Medical Advisor to SunCoke Energy and Dr. Buchanan was appointed to the Children's Health Protection Advisory Committee of USEPA.
- Dr. Duvall became Medical Advisor to Hospira Health, Inc. and Dr. Orris was elected the 2011 Distinguished Alumnus, Chicago Medical School, Rosalind Franklin University of Medical Sciences. Dr. Krantz is the co-medical director of the Healthy Lungs Initiative, a program of the Cook county Health and Hospitals System.
- Dr. Forst testified before the Illinois State Legislature on the use of the AMA Guides for Evaluation of Permanent Impairment in the State's new Workers Compensation legislation. She sits on the ILO committee developing criteria for diagnosis of occupational diseases.

- Dr. Forst took over directorship of the on-line curriculum offered through EOHS, International Certificate Program in Occupational Health and Hygiene Practice. Dr. Buchanan serves as faculty in that course.
- Dr. Orris served as: an expert Consultant, Region V, USEPA; as Physician Advisor for the Retirement Board of the Chicago Policemen's Annuity Benefit Fund; as President of District 6, Chicago Medical Society; and as Consultant to the United Nations Development Program Medical Waste Project.
- Dr. Dorevitch served as a peer reviewer to US EPA's "Recreational Water Quality Criteria" document.
- Dr. Steven Lacey and Burcu Yavuz (HSAT) organized the student poster session at the International Congress in Occupational Health in Cancun, Mexico in March 2012.
- Mr. Salvatore Cali is currently serving on the AIHA Chicago Section Board of Directors.
- IH Trainee Quincy Coleman is current president of the UIC American Industrial Hygiene Association Student Chapter.
- IH Trainee Brian Czarnecki is current president of the UIC American Society of Safety Engineers Student Chapter.

### **Student Presentations (trainees are underlined; <sup>t</sup>NIOSH funded trainee)**

- Miller<sup>t</sup> CD, Rhen DS, Clay DM, Aherin RA: *Health status of US farmers and ranchers: Using NHANES (1999-2004) to determine disability and chronic incident of disease*. Presented at the American Society of Agricultural and Biological Engineering annual conference, July 2012. Dallas, TX.
- Miller<sup>t</sup> CD, Aherin RA: *Farmers with Disabilities: Using National Data to Estimate Prevalence*. Presented at the National AgrAbility Conference. November, 2011. Indianapolis, IN.
- Graber<sup>t</sup> JM, Attfield MD, Stayner LT: *Results from 37 years of mortality experience among U.S. Underground Coal Miners*. Presented at the 2011 annual meeting of the Scientific Committee on Epidemiology in Occupational Health (EPICOH), Oxford, UK. Sept. 2011.
- DeFlorio S: *Does Measuring the Water Quality at Beaches Twice Per Day Lead to Different Management Decisions?* Presented at the State of Lake Michigan and Great Lakes Beach Association Conference, September 2011.
- Hepler<sup>t</sup> J: *Rainfall Effects on E. coli Concentrations at Chicago Beaches*. Poster presentation at American Industrial Hygiene Conference and Expo in Indianapolis, IN, June 16-21, 2012 **{Best Student Poster Award from the Social Concerns Committee}**
- Graber<sup>t</sup> JM, Attfield MD, Stayner LT: *Results from 37 years of mortality experience among U.S. Underground Coal Miners*. Presentation at the Scientific Committee on Epidemiology in Occupational Health (EPICOH), Oxford, UK, September 2011.
- Pagone<sup>t</sup> F, Kim, S, Erdal, S: *USEPA's Toxic Release Inventory Data: Spatial and Temporal Trends in Illinois*. Presentation at American Industrial Hygiene Association-Chicago Local Section Student Night, LaGrange, IL, February 23, 2012.
- Sietsma<sup>t</sup> M, Conroy LM, Cline K, Brosseau LM: *Scoring Hospitals Using Written Respiratory Protection Programs and Interview Responses Based on the OSHA Respiratory Protection Standard*. Poster presentation at National Personal Protective Technology Laboratory Stakeholder Meeting. 21-Mar-12.
- Sietsma<sup>t</sup> M, Conroy LM, Cline K, Brosseau LM: *Scoring Hospitals Using Written Respiratory Protection Programs and Interview Responses Based on the OSHA Respiratory Protection Standard*. Poster presentation at American Industrial Hygiene Conference and Expo in Indianapolis, IN, June 16-21, 2012.

### **Publications**

For a complete list of publications by faculty and students at the Illinois ERC, please visit our website:

<http://www.uic.edu/sph/erc>